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START II Frame Work

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ABSTRACT

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This paper examines the unfinished business of START as seen by both the U.S. and Soviet negotiators. It reviews possible strategic nuclear force structures that would survive if an agreement was reached to reduce warheads to levels of 6,000; 5,000; 4,000; 3,000; 2,000; 1,245; and 1,000. It analyzes the value of each weapon at these reduction increments. It predicts the lowest number of strategic nuclear warheads we could reach and still have a viable deterrence based on the cover of a triad. The reader needs only an elementary knowledge of strategic nuclear arms control negotiation terms and procedures. Throughout the paper, the former Soviet republics and the new Commonwealth of Independent States are referred to as the Soviets. This is done because all of the research and much of the writing was done before the Commonwealth of Independent States was formed.

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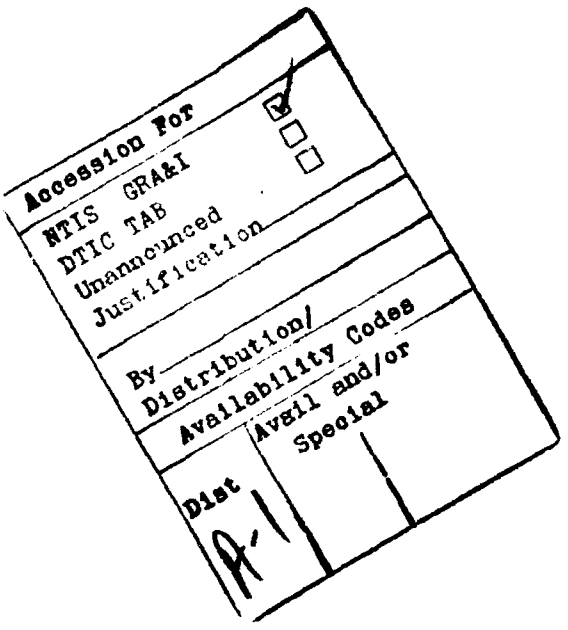

INTRODUCTION

The purpose of this paper is to propose a frame work for the next round of Strategic Arms Reduction Talks (START). In order to do this it is necessary to make a few assumptions.

ASSUMPTIONS

1. START, whether ratified or not, will be accepted by the U.S. and former Soviet republics.
2. Political and economic pressure in the U.S. and in the former Soviet republics will prompt each side to further reduce their nuclear arsenals.
3. There will be a follow-on to START.
4. The frame work for START II will spring from the unfinished business of START and the strategic nuclear force structure it leaves.

Lets review the assumptions.

1. START, WHETHER RATIFIED OR NOT WILL BE ACCEPTED

Russia views itself as heir to the former Soviet Union for arms control agreements[1] but Congress is reluctant to ratify START without a legitimate successor to ensure implementation and verification of the treaty.[2] Not all of the former Soviet republics are willing to let Russia speak for them. This leaves a void on their part concerning arms control that has to be filled. We're not sure how START will be implemented, who will enforce it, or how we will verify compliance. Nevertheless, START will be accepted. Here is why.

Last September, President Bush announced unilateral actions which added to the spirit and process of START. At that time, he promised to ratify it soon. In October, President Gorbachev trumped America's offer, and promised to ratify START rapidly.

President Gorbachev is no longer in a position to fulfill his promise. However, both the Americans and the Soviets are interested in reducing the number of nuclear warheads through START and unilateral actions.[3] The break-up of the Soviet Union changed the actors but not the desires to reduce nuclear arsenals. In time, a legitimate government will step forward and resume nuclear arms control negotiations. Until then, the U.S. is prepared to negotiate with Russia and other former Soviet republics if necessary.[4]

2. POLITICAL AND ECONOMIC PRESSURE IN THE U.S. AND IN THE FORMER SOVIET REPUBLICS WILL PROMPT EACH SIDE TO FURTHER REDUCE THEIR NUCLEAR ARMS

Since the break-up of the Soviet Union, Americans have been celebrating our alleged victory in the cold war. The Soviet threat of nuclear war no longer exist in the minds of most voters. The American public is expecting a peace dividend.

Considering this, it is reasonable to assume that Congress will cut defense spending. Expenditures on strategic nuclear arms will be prime targets of opportunity.[5]

In the past, Soviet trade was restricted by a chronic shortage of hard currency. Other than oil, their economy produced few marketable exports. The low cost of oil in the 1980s aggravated their shortage of hard currency. Today, they are caught in a cycle of domestic problems caused by poor economic conditions and poor economic conditions aggravated by their domestic crisis. They still produce few goods that are marketable outside the republics and once again low oil prices intensify their economic dilemma. Their economy demands reform.

They need better trade agreements, technology transfers, and outside credits.[6]

Since the break-up of the Soviet Union leaves doubt about the control of massive strategic nuclear arsenals, it is reasonable to assume the U.S. will tie economic aid, technological transfers, and credits to a reduction in Soviet nuclear power. Although the former Soviet republics rely on Europe and Asia for the majority of their economic support, these creditors are also concerned with Soviet nuclear overkill.[7]

3. THERE WILL BE A FOLLOW-ON TO START

Because of the political and economic reasons listed above and the fact that START left unfinished business that both sides would like to resolve, it is reasonable to assume there will be a follow-on to START. START II will have to resolve the unfinished business of START while arriving at equitable limits to strategic nuclear force structures.

(A) UNFINISHED BUSINESS FROM START THAT THE U.S. WOULD LIKE TO RESOLVE

There are at least three major areas of unfinished business from START that American negotiators would like to resolve. They are warhead sublimits, heavy ICBMs, and mobile ICBMs.

(1) WARHEAD SUBLIMITS

A major U.S. objective in START was to achieve significant reductions in the most destabilizing weapons--Soviet Intercontinental-range Ballistic Missiles (ICBMs). We attempted

to limit Soviet reliance on ICBMs by introducing warhead sublimits on ballistic missiles. We failed to secure a sublimit on ICBMs in general but did get an agreement to sublimits on heavy and mobile ICBM warheads. However, these sublimits will not change the Soviet triad. Nearly 60 percent of all Soviet weapons will continue to be warheads on ICBMs. The Soviets will therefore keep an asymmetric advantage in prompt counter force potential against U.S. hardened targets. This has a negative impact on stability as defined by the United States.[1]

(2) HEAVY ICBMs

In order to promote stability and equality of limits under START, the United States sought a complete ban on Soviet heavy ICBMs. The Soviets eventually accepted a 50 percent reduction in heavy ICBMs, but refused restrictions on flight-testing or modernizing the remaining missiles. They introduced two new versions of the SS-18 during the course of the negotiations. Given the likely reductions in the size of U.S. ICBM forces under START, and improvements in the lethality of remaining SS-18s, the Soviets can cover all critical land-based U.S. targets with their reduced SS-18 force.

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1. The U.S. refers to stability as a fuction of first-strike stability. First-strike stability is defined as the lack of incentives for initiating a nuclear strike. Stabilizing forces must be both survivable and incapable of posing a disarming first-strike threat to the other side's retaliatory forces.

(3) MOBILE ICBMs

In November 1985, the U.S. introduced a ban on mobile ICBMs as part of its START proposals. This was intended to forestall a Soviet monopoly in mobile ICBMs and to put pressure on the Soviets to come up with an acceptable verification scheme.

In September 1989, the U.S. agreed to drop the proposed ban on mobile ICBMs on two conditions--that Congress fund deployment of mobile ICBMs and that a satisfactory verification regime be established for them.

Neither condition has been realized.[8]

(B) UNFINISHED BUSINESS THE SOVIETS WOULD LIKE TO RESOLVE

The Soviets have at least two reasons they would like to resume START negotiations.

(1) AIR-LAUNCHED CRUISE MISSILES (ALCMs)

The Soviets did not realize their initial ALCM position in START. They wanted a complete ban on ALCMs whose range exceeded 600 kilometers. They have reservations about the verification and distinguishability between nuclear and non-nuclear cruise missiles. In addition, they don't like the counting rules attributing fewer ALCMs to U.S. bombers than those aircraft actually carry.

(2) STRATEGIC DEFENSE INITIATIVE (SDI)

The most salient Soviet objective during START concerned SDI. Our objective was to avoid linking SDI with an offensive

weapons system. The Soviets considered SDI offensive in nature and on several occasions requested a total ban. Their final position stands, if the U.S. violates the Anti-Ballistic Missile (ABM) treaty then START will be void. The Soviets consider deployment of SDI to be a violation of ABM.[9]

There is hope that some members of the former Soviet Union may see utility in permitting modifications to the ABM treaty and allow limited deployments of strategic defenses. However, if START is a guide, the U.S. and the new republics will disagree on the merits of SDI for a long time.

4. THE FRAME WORK FOR START II WILL SPRING FROM THE UNFINISHED BUSINESS OF START AND THE FORCE STRUCTURE IT LEAVES

START breaks with previous arms control agreements by reducing the number of strategic nuclear weapons rather than merely limiting them. It establishes more meaningful units of account, namely reductions in warheads rather than delivery systems. The final limits include

(A) 1,600 Strategic Nuclear Delivery Vehicles (SNDV)
(B) 6,000 Accountable Warheads
(C) 4,900 Ballistic Missile Warheads--ICBMs and Sea-Launched Ballistic Missiles (SLBMs)
(D) 1,540 Warheads on 154 Heavy ICBMs for the Soviets
(E) 1,100 Warheads on Deployable Mobile ICBMs
(F) Throw-Weight Ceiling of 3,600 metric tons, and
(G) Verification by National Technical Means (NTM).

If START counting rules were applied to our current force structure, (see chart 1) we would have 1,886 SNDVs; 11,826 actual warheads; 9,495 accountable warheads; 7,890 ballistic missile warheads; and 1,605 warheads deployed on mobile ICBMs.

After START, (see chart 2) we will have 1,245 SNDVs; 9,064 actual warheads; 5,956 accountable warheads; 4,856 ballistic

missile warheads; and 1,100 warheads on deployable mobile ICBMs.

Basically, we intend to eliminate Minuteman IIs and C-3s, reduce the number of Minuteman IIIs and C-4s, and increase the number of bombers.

The merits of START are realized when we compare the current Soviet strategic nuclear force structure with the one that will most likely be left after the treaty.

Before START, (see chart 3) the Soviets had 2,390 SNDVs; 10,251 actual warheads; 10,187 accountable warheads; 9,387 ballistic missile warheads; and 1,475 mobile launchers (675 that are not part of their bomber count).

After START, (see chart 4) the Soviets will have 1,351 SNDVs; 5,961 actual warheads; 5,575 accountable warheads; 4,647 ballistic missile warheads; and 1,603 mobile launchers (675 that are not part of their bomber count).

Although their number of actual warheads (5,961) seems small when compared to the U.S. number (9,064), it's sufficient to maintain a first-strike capability. In addition, the Soviets could further benefit from a loop hole in START counting rules which allows bombers to be discounted. This begs the question, how do we reduce the number of nuclear warheads and still maintain a viable deterrence. The answer is twofold. First, we need to determine the best mix of strategic nuclear weapons for our force structure. Then, we need to review reduction limits and see what they would do to our force structure.

DETERMINING THE BEST STRATEGIC NUCLEAR FORCE STRUCTURE FOR START II

We know how many ICBMs, SLBMs and heavy bombers we have. We know how many the former Soviets have. We know how many warheads each weapon carries. We know the availability rate, alert rate, survivability rate, and system reliability rate of each weapon. The only part of the equation we don't know is the probability of penetrating enemy defenses. Even with this uncertainty, it's possible to determine the best force structure for START II.

Rand has a chart that explains part of the equation. It predicts the availability, alert rate (both generated and day-to-day), prelaunch survivability (both prompt and delayed launch), and system reliability for each weapon in our triad. From this chart we can determine the composite reliability of each weapon.[1]

The composite reliability (likelihood that a weapon can be launched) multiplied by weapon penetrating potential equals the gross value of each weapon.

The gross value (likelihood that a weapon can be launched and penetrate enemy defenses) multiplied by the number of actual warheads determines the number of arriving warheads.

The number of arriving warheads under the worst situation is the best measure of deterrence.[10]

In addition, by comparing the number of arriving warheads to the number of accountable warheads we get the net value of each

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1. Composite reliability is determined by multiplying weapon availability rates times alert rates, times launch rates, times systems reliability. This is done for both prompt launch and delayed launch conditions for ICBMs. For SLBMs and bombers, it is done for both generated and day-to-day alert conditions.

weapon in our triad. The weapon with the highest net value is the one that takes the most advantage of START counting rules. It is not coincidental that the weapons which are discounted (have the highest net value) are also the ones that provide the most stability. U.S. negotiators made this an American START objective.

If we take the number of accountable warheads from 6,000 to 1,000 in increments of 1,000, we get an idea of how far we can go in START II negotiations and still have a viable deterrence.[1] I submit the lowest numerical position we can achieve and still maintain a viable deterrence is the best force structure for START II.

I'll also compare force structures at the U.S. limit of 1,245 accountable warheads since this represents a position we could obtain by deMIRVing all ICBMs and SLBMs.

Let's look at Rand's chart on weapons availability, alert rate, survivability, and reliability.

RAND'S CHART

	Availability	Alert Rate		Prelaunch Survivability		System Reliability
		Generated	Day	Prompt	Delayed	
ICBMs	1.0	1.0	1.0	1.0	0.1	0.9
SLBMs	0.9	1.0	0.7	1.0	1.0	0.8
Bombers	0.9	1.0	0.3	1.0	1.0	0.8[11]

Given these statistics, each weapon in the triad has the

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1. A key element of our national security is deterrence of nuclear war. We reason the Soviets will not initiate unrestrained nuclear attack against the United States if we can inflict unacceptable damage in retaliation.

following composite reliability. See chart 5.

ICBMs = 0.9 (prompt launch), 0.09 (delayed launch)
SLBMs = 0.72 (generated alert), 0.5 (day-to-day alert)
Bombers = 0.72 (generated alert), 0.22 (day-to-day alert)

The composite reliability of ICBMs, SLBMs, and bombers coupled with the probability of penetrating enemy defenses gives us the gross value of each weapon.

PENETRATING ENEMY DEFENSES

Although we can't precisely predict the penetrating probabilities of our weapons, we know ICBMs and SLBMs have essentially no defenses to penetrate while bombers face unconstrained enemy air defenses.[12] By using a sliding scale for penetrating potential we can predict the number of arriving warheads under the best and worst situations.

BEST SITUATION

The best situation is when ICBMs are under prompt launch conditions, and SLBMs and heavy bombers are on generated alert.

If all weapons could penetrate enemy defenses (see chart 6), ICBMs, under prompt launch conditions, would produce the highest gross value, (0.9). SLBMs and heavy bombers on generated alert would follow them closely, (0.72 each).[1]

Since bombers carry ALCMs, SRAMs and gravity bombs, which

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1. Although it's highly unlikely that all weapons would penetrate enemy defenses, this example is a good starting point for using a sliding scale to predict the gross value of each weapon.

are discounted, an argument could be made that under these conditions bombers represent the best single source of deterrence even though their gross value is less than that of ICBMs. In essence, because of their discount, bombers could put more warheads on targets even though they have less chances of penetrating enemy defenses.

A more likely scenario would be to assign ICBMs and SLBMs 90 percent chances of penetrating enemy defenses and bombers a 70 percent chance. See chart 7.

If ICBMs and SLBMs had 90 percent chances of penetrating enemy defenses and heavy bombers had a 70 percent chance of making it through, then ICBMs under prompt launch conditions would have the highest gross value, (0.81). SLBMs would have the second highest, (0.65). Again, the discount applied to bombers would make them an important part of the triad.

Considering the multitude and make-up of enemy air defenses, the most believable formula for penetrating them is ICBMs and SLBMs--95 percent chances, bombers--50 percent.[1] See chart 8.

Under the best situation, if ICBMs and SLBMs had 95 percent chances of penetrating enemy defenses and bombers had only a 50 percent chance of making it through, then ICBMs have the highest gross value, (0.86). Again, SLBMs come in second place, (0.68). If we stopped the equation at this point and didn't consider the number of warheads carried by each weapon, the value of bombers

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1. Bomber statistics assume B-2s have a 95 percent chance of penetrating enemy defenses while other bombers have slightly less than a 50 percent chance (46 percent).

would be questionable. Their low gross value (0.36) warrants concern about their worth to the triad. Under these conditions, and without factoring in the discount, keeping bombers would be for the sake of having a triad. Which is not a bad idea.[1]

The previous paragraphs say a lot about our strategic nuclear force structure capabilities under the best situation. However, the best situation is not necessarily the most probable one.

WORST SITUATION[2]

At one time, the worst situation was having ICBMs under delayed launch, and SLBMs and bombers on day-to-day alert. Now, heavy bombers have been taken off alert. As mentioned in the Rand study, bombers that are off alert have a zero chance of surviving a Soviet first-strike attack. However, since they can be brought back on alert before a first-strike occurs, I've included them as if they were on day-to-day alert.

Under the worst situation, even if each weapon had a 100 percent chance of penetrating enemy defenses (see chart 9), the formula would change significantly. SLBMs would have the highest gross value, (0.5). ICBMs and bombers would score low marks, (0.09 and 0.22 respectively).

Again, not all weapons are going to make it through enemy

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1. To ensure deterrence, the United States maintains diversified strategic retaliatory forces (triad) to hedge against a disarming first-strike, to complicate Soviet attack plans, and to guard against technological surprise.

2. The worst situation is when ICBMs are under delayed launch and SLBMs and bombers are on day-to-day alert.

defenses so we need to apply other formulas to the worst situation.

If ICBMs and SLBMs had 90 percent chances of penetrating enemy defenses and bombers had a 70 percent chance (see chart 10), SLBMs would have the highest gross value, (0.45). If the equation stopped short of including the number of accountable warheads, the reasons for keeping bombers (0.15 gross value) would be questionable. In addition, under the worst situation, ICBMs have the lowest gross value (0.08). Under these circumstances, only their throw-weight would justify alarm.

If ICBMs and SLBMs had a 95 percent chance of penetrating enemy defenses and bombers had a 50 percent chance (see chart 11) the results would change slightly. SLBMs still would have the highest gross value, (0.48). We need to look at the number of warheads carried by ICBMs and bombers to determine their worth. Which brings us to the next step in measuring the worth of weapons--the number of arriving warheads.

The number of arriving warheads is determined by multiplying the gross value (likelihood that a weapon can launch and penetrate enemy defenses) times the number of actual warheads. For the sake of brevity, I'll do this only twice--once for the best situation and once for the worst. The most likely penetration percentages will be applied to both situations.

In charts 12 and 13, the gross value of a weapon is multiplied times the number of actual warheads each weapon carries. This gives us the number of arriving warheads. The number of arriving warheads is then divided by the number of

accountable warheads. This gives us the net value of a weapon. For instance, under the conditions listed for chart 12, for every accountable strategic nuclear warhead loaded on a bomber, 1.38 will reach the target area. Under the worst conditions (see chart 13), for every accountable warhead loaded on a bomber, 0.42 will detonate in enemy territory. Keep in mind, the best measure of deterrence is the number of arriving warheads under the worst situation and the weapon with the highest net value is the one that contributes the most to stability.

ICBMs do well under the best situation but not so well under the worst. To keep the triad viable we need to ensure the survivability of ICBMS under the worst situation. Since we can't afford a mobile ICBM system, deMIRVing is the best way to ensure their survivability under either situation.

Nonalert forces have zero prelaunch survivability, so under the current situation (zero bombers on alert) our bomber force would be negated if we received an unrestrained nuclear attack. If submarines are taken off of alert, they too would be nullified. It would be wise to find a way to put bombers back on alert without alarming the enemy.

Under both situations (best and worst) each leg of the triad adds to the number of arriving weapons and enhances the survival of the other two legs. However, if we reduce the number of strategic nuclear warheads this could change. With a reduction in warheads we might be faced with the decision to abandon the triad and use one or two weapons for strategic deterrence.

Given the calculus for determining the value of weapons under different situations, we need to look at the most probable

U.S. and Soviet force structures at reduction levels from 6,000 to 1,000 accountable warheads.

REDUCTION OF ACCOUNTABLE WARHEADS FROM 6,000 TO 1,000

It is not difficult to reduce accountable warheads to a limit of 5,000. SNDVs already are below the limit of 1,600 at 1,245. However, the reduction to 5,000 accountable warheads will require a choice between weapons and services.

Reducing the number of SNDVs or warheads on submarines is both cost prohibitive and tactically unsound. Submarines provided excellent deterrence under both situations. Reducing their numbers makes it easier for antisubmarine forces to concentrate their efforts on tracking them.

In the initial cut to 5,000 warheads, the Air Force will have to choose between ICBMs and bombers. Given the discount afforded bombers and the proven net value of them under both situations, it should be an easy decision.

We can reduce the number of accountable warheads by 400 if we deMIRV Minuteman III missiles. We can reduce the number by another 450 if we deMIRV Peacekeeper. Another 117 accountable warheads could be eliminated by lowering the number of ALCM carrying B-52Hs from 93 to 80. We could add ALCMs to the 80 B-52Hs and use the 13 aircraft no longer carrying ALCMs for SRAMS and gravity bombs.

DeMIRVing ICBMs has three advantages. First, it is a low cost option. Second, it allows us to keep silos which are politically and financially difficult to replace. Third, it

opens the door for us to ask the Soviets to deMIRV their SS-18s and SS-24s.

Chart 14 shows what our force structure would look like if we agreed to a 5,000 accountable warhead limit. We would have 1,245 SNDVs; 8,534 actual warheads; 4,989 accountable warheads; 4,006 ballistic missile warheads, and 983 accountable warheads on mobile ICBMs. It also shows the number of arriving warheads and ratio of arriving warheads to accountable warheads (net value) under the best and worst situations. Keep in mind, the best measure of deterrence is the number of arriving warheads under the worst situation. Also remember, the weapon with the highest net value is the one that takes the most advantage of current START counting rules and provides the most stability.

In each case, although the number of arriving warheads decreases, the ratio of arriving warheads to accountable warheads improves. Charts 12 and 13 show the number of arriving warheads and the ratio of arriving warheads to accountable warheads for the most likely U.S. force structure after START. This will be a significant factor if we can get the Soviets to reduce their number of destabilizing, first-strike nuclear weapons.

Considering these limits, we should ask the Soviets to deMIRV their SS-18 and SS-24 forces. It's doubtful they would agree. Nevertheless, one of the lessons we should remember from previous negotiations is to never begin a treaty with an offer close to the final objective.[1]

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1. Taken from Ambassador Edward L. Rowny's words on the "Ten Commandments for Negotiating" in Kerry M. Kartchner's book Negotiating START referred to often in this paper.

Chart 15 shows what the Soviet's force structure would look like if they agreed to deMIRV SS-18s and SS-24s.

Since the Soviets would already be below a 4,000 accountable warhead limit we need to look at what our force structure would look like if we continued to reduce the number of accountable warheads to less than 4,000.

In addition to the cuts already taken, we should reduce the number of warheads on 248 of our C-4 missiles from 8 to 4. This would account for an additional 992 warheads and bring our total to 3,997.

Chart 16 shows what our strategic nuclear force structure would look like if we agreed to a limit of 4,000 warheads. It also shows the number of arriving warheads and net value of each weapon under the best and worst situations.

By decreasing the number of accountable warheads from 4,989 to 3,997, we lost 674 arriving warheads under the best situation and 476 under the worst. Our total net value (ratio between accountable warheads and arriving warheads) improved under the best situation and decreased slightly under the worst. Compare charts 14 and 16. If the Soviets agreed to these reductions our position would improve slightly considering both situations.

If 3,000 was the limit on accountable warheads, we would have to make a choice between deMIRVing all C-4 missiles or disallowing ALCMs and reducing the number of warheads on all C-4 missiles from 8 to 4.

The smarter choice is to disallow ALCMs and reduce the number of warheads on all C-4 missiles from 8 to 4. This

proposition has two advantages. First, U.S and Soviet force structures would be similar and therefore it should be easier to reach an agreement. Second, the Soviets have an additional 315 Backfire aircraft they could eventually arm with ALCMs.

Chart 17 shows what our force structure would look like if we went to a 3,000 accountable warhead ceiling. It also points out the number of arriving warheads and the net value of each weapon under the best and worst situations. Notice our total net value increases under both situations. Compare charts 16 and 17.

Chart 18 shows what the Soviet's force structure would look like if they agreed to eliminate ALCMs. Notice the number of actual warheads increases even though the number of accountable warheads decreases. These figures reflect the assumption that the Soviets would replace ALCMs with SRAMs and gravity bombs.

In order to get below a limit of 2,000 accountable warheads, the U.S. would have to deMIRV all C-4 missiles. Chart 19 shows what our strategic nuclear force structure would look like if we set the limit for accountable warheads at 2,000. Compare charts 17 and 19 and you can see our net value increases under both situations when we drop the number of accountable warheads from 3,000 to 2,000.

If we do this, we should ask the Soviets to deMIRV all SS-N-18s and SS-N-20s. Chart 20 shows what their force structure would look like if they agreed to these reductions.

The lowest numerical level the U.S. could reach and not break the triad is 1,245 accountable warheads. In order to do this we would have to deMIRV ICBMs and SLBMs, and eliminate ALCMs. If we went below this limit, even to 1,000 accountable

warheads, we would have to reduce either ICBMs, SLBMs or bombers beyond their viable usefulness.

If we reduced our strategic nuclear force structure to 1,245 accountable warheads, we'd have to insist the Soviets deMIRV their SS-N-23s and eliminate all SS-18s. Surprisingly, this option comes the closest to parity of all reduction limits. It is also the lowest level we can reach and still improve our net value. Compare charts 19, 21, and 23.

Chart 22 shows what the Soviet's force structure would look like if they agreed to eliminate ALCMs and comply with a limit of 1,245 accountable strategic nuclear warheads.

Chart 23 shows what we would have if we agreed to reduce our accountable strategic nuclear force structure to less than 1,000 warheads. We would have to eliminate all bombers from the strategic nuclear force structure and ask the Soviets to do the same. Bombers are the most stabilizing weapon system. This would leave us with 982 accountable warheads. The Soviets would have 1,040. We'd have to ask them to also eliminate SS-24s. See chart 24. This would bring their total to 984 which would be extremely comparable in weapons, numbers and warheads, but it would break the triad and our net value would decrease under both situations.

CONCLUSION

START, although a great step toward nuclear reduction left unfinished business that both sides would like to resolve. Sixty

percent of all Soviet strategic nuclear weapons will remain in ICBMs, the most destabilizing of all weapons. Even with the reduction in forces, the Soviets can cover all critical land-based U.S. targets. START leaves the Soviets with a monopoly on mobile ICBMS. The Soviets, in turn, would like to see the counting rules for ALCMs changed and the U.S. abandon SDI.

We've learned the value of certain weapons under different situations and penetrating probabilities. We know the best deterrence is derived by having a convincing number of arriving warheads under the worst situation. Finally, we can see the results of further reductions to our strategic nuclear force structure in terms of weapons, warheads, and value by comparing reduction limits in 1,000 increments.

The frame work for START II should include a bottom line number for accountable warheads that erases the unfinished business of START. A reduction to 1,245 accountable warheads would do this without breaking the triad or decreasing the net value of our defense.

CHART 1

THE CURRENT U.S. STRATEGIC NUCLEAR FORCE STRUCTURE

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
Minuteman II	450	x 1	=	450	450
Minuteman III	500	x 3	=	1,500	1,500
MX (Peacekeeper)	50	x 10	=	500	500
Subtotal ICBMs	1,000			2,450	2,450
SLBMs					
C-3	160	x 10	=	1,600	1,600
C-4	384	x 8	=	3,072	3,072
D-5	96	x 8	=	768	768
Subtotal SLBMs	640			5,440	5,440
Bombers[1]					
B-52G (ALCM)	58	x 16	=	928	580
B-52H (ALCM)	93	x 16	=	1,488	930
B-1B	95	x 16	=	1,520	95
Subtotal Bombers	246			3,936	1,605
Total All Weapons	1,886			11,826	9,495[13]

chart 1

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1. For the United States, each heavy bobmber equipped for long-range nuclear ALCMs, up to 150, is attributed with 10 accountable warheads. Each heavy bomber equipped with short-range attack missiles (SRAMS) and gravity bombs is arrtibuted with one accountable warhead.

CHART 2

THE MOST LIKELY U.S. STRATEGIC NUCLEAR FORCE STRUCTURE AFTER START

Weapons	SNDVs	Actual Warheads	Accountable Warheads
ICBMs			
Minuteman III	200 x 3 =	600	600
Minuteman III	300 x 1 =	300	300
MX (Peacekeeper)	50 x 10 =	500	500
Subtotal ICBMs	550	1,400	1,400
SLBMs			
C-4	336 x 8 =	2,688	2,688
D-5	96 x 8 =	768	768
Subtotal SLBMs	432	3,456	3,456
Bombers			
B-52G	55 x 16 =	880	55
B-52H (ALCM)	93 x 16 =	1,488	930
B-1B	95 x 16 =	1,520	95
B-2	20 x 16 =	320	20
Subtotal Bombers	263	4,208	1,100
Total All Weapons	1,245	9,064	5,956[14]

chart 2

CHART 3

THE CURRENT SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
SS- 11	296	x	1	=	296	296
SS- 13	40	x	1	=	40	40
SS- 17	44	x	4	=	176	176
SS- 18	308	x	10	=	3,080	3,080
SS- 19	300	x	6	=	1,800	1,800
SS- 24 (Silo)	56	x	10	=	560	560
SS- 24 (Rail)	36	x	10	=	360	360
SS- 25	315	x	1	=	315	315
Subtotal ICBMs	1,395				6,627	6,627
SLBMs						
SS- N-6	160	x	1	=	160	160
SS- N-8	280	x	1	=	280	280
SS- N-18	224	x	3	=	672	672
SS- N-20	120	x	10	=	1,200	1,200
SS- N-23	112	x	4	=	448	448
Subtotal SLBMs	896				2,760	2,760
Bombers						
Bear-H (ALCM)	84	x	8	=	672	672
Blackjack (ALCM)	16	x	12	=	192	128
Subtotal Bombers	100				864	800
Total All Weapons	2,390				10,251	10,187[15]

chart 3

CHART 4

THE MOST LIKELY SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE AFTER START

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
SS- 18	154	x 10	=	1,540	1,540
SS- 24 (Silo)	56	x 10	=	560	560
SS- 24 (Rail)	36	x 10	=	360	360
SS- 25	528	x 1	=	528	315
Subtotal ICBMs	774			2,775	2,775
SLBMs					
SS- N-18	192	x 3	=	576	576
SS- N-20	120	x 6	=	720	720
SS- N-23	144	x 4	=	576	576
Subtotal SLBMs	456			1,872	1,872
Bombers					
Bear-H (ALCM)	85	x 10	=	850	680
Bear-G	20	x 4	=	80	20
Blackjack (ALCM)	16	x 24	=	384	128
Subtotal Bombers	121			1314	928
Total All Weapons	1,351			5,961	5,575[16]

chart 4

CHART 5

COMPOSITE RELIABILITY OF ICBMs, SLBMs, AND BOMBERS

ICBMs (0.9 or 0.09)

ICBMs under prompt launch conditions	1.0 (Availability)
	x 1.0 (Alert)
	x 1.0 (Launch)
	x 0.9 (System)
Composite Reliability	= 0.9

ICBMs under delayed launch	1.0 (Availability)
	x 1.0 (Alert)
	x 0.1 (Launch)
	x 0.9 (System)
Composite Reliability	= 0.09

SLBMs (0.72 or 0.5)

SLBM under generated alert	0.9 (Availability)
	x 1.0 (Alert)
	x 1.0 (Survivability)
	x 0.8 (System)
Composite Reliability	= 0.72

SLBM under day-to-day alert	0.9 (Availability)
	x 0.7 (Alert)
	x 1.0 (Survivability)
	x 0.8 (System)
Composite Reliability	= 0.504

Bombers (0.72 or 0.22)

Bombers under generated alert	0.9 (Availability)
	x 1.0 (Alert)
	x 1.0 (Survivability)
	x 0.8 (System)
Composite Reliability	= 0.72

Bombers under day-to-day alert	0.9 (Availability)
	x 0.3 (Alert)
	x 1.0 (Survivability)
	x 0.8 (System)
Composite Reliability	= 0.216

chart 5

CHART 6

BEST SITUATION AND ALL WEAPONS HAVE A 100 PERCENT CHANCE OF PENETRATING ENEMY DEFENSES

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.9	x	1.0	= 0.9
SLBMs	0.72	x	1.0	= 0.72
Bombers	0.72	x	1.0	= 0.72

CHART 7

BEST SITUATION AND ICBMs AND SLBMs HAVE 90 PERCENT CHANCES OF PENETRATING ENEMY DEFENSES WHILE BOMBERS HAVE A 70 PERCENT CHANCE

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.9	x	0.9	= 0.81
SLBMs	0.72	x	0.9	= 0.65
Bombers	0.72	x	0.7	= 0.5

CHART 8

BEST SITUATION AND ICBMs AND SLBMs HAVE 95 PERCENT CHANCES OF PENETRATING ENEMY DEFENSES WHILE BOMBERS HAVE A 50 PERCENT CHANCE

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.9	x	0.95	= 0.86
SLBMs	0.72	x	0.95	= 0.68
Bombers	0.72	x	0.5	= 0.36

charts 6,7 and 8

CHART 9

WORST SITUATION AND ALL WEAPONS HAVE A 100 PERCENT CHANCE OF PENETRATING ENEMY DEFENSES

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.09	x	1.0	= 0.09
SLBMs	0.5	x	1.0	= 0.5
Bombers	0.22	x	1.0	= 0.22

CHART 10

WORST SITUATION AND ICBMs AND SLBMs HAVE 90 PERCENT CHANCES OF PENETRATING ENEMY DEFENSES WHILE BOMBERS HAVE A 70 PERCENT CHANCE

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.09	x	0.9	= 0.08
SLBMs	0.50	x	0.9	= 0.45
Bombers	0.22	x	0.7	= 0.15

CHART 11

WORST SITUATION AND ICBMs AND SLBMs HAVE 95 PERCENT CHANCES OF PENETRATING ENEMY DEFENSES WHILE BOMBERS HAVE A 50 PERCENT CHANCE

	Composite Probability		Penetrating Probability	Gross Value
ICBMs	0.09	x	0.95	= 0.09
SLBMs	0.50	x	0.95	= 0.48
Bombers	0.22	x	0.5	= 0.11

charts 9,10 and 11

CHART 12

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	1,400	=	1,204	-	1,400	=	0.86
SLBMs	0.68	x	3,456	=	2,350	-	3,456	=	0.68
Bombers	0.36	x	4,208	=	1,515	-	1,100	=	1.38
Total			9,064		5,069	-	5,956	=	0.85

CHART 13

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	1,400	=	126	-	1,400	=	0.09
SLBMs	0.48	x	3,456	=	1,659	-	3,456	=	0.48
Bombers	0.11	x	4,208	=	463	-	1,100	=	0.42
Total			9,064		2,248	-	5,956	=	0.38

charts 12 and 13

CHART 14

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE AFTER 5,000 WARHEAD LIMIT

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
Minuteman III	500	x	1	=	500	500
MX (Peacekeeper)	50	x	1	=	50	50
Subtotal ICBMs	550				550	550
SLBMs						
C-4	336	x	8	=	2,688	2,688
D-5	96	x	8	=	768	768
Subtotal SLBMs	432				3,456	3,456
Bombers						
B-52G	55	x	16	=	880	55
B-52H	13	x	16	=	208	13
B-52H (ALCM)	80	x	16	=	1,600	800
B-1B	95	x	16	=	1,520	95
B-2	20	x	16	=	320	20
Subtotal Bombers	263				4,528	983
Total All Weapons	1,245				8,534	4,989

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	550	=	473	-	550	=	0.86
SLBMs	0.68	x	3,456	=	2,350	-	3,456	=	0.68
Bombers	0.36	x	4,528	=	1,630	-	983	=	1.66
Total			8,534		4,453	-	4,989	=	0.89

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	550	=	50	-	550	=	0.09
SLBMs	0.48	x	3,456	=	1,659	-	3,456	=	0.48
Bombers	0.11	x	4,528	=	498	-	983	=	0.51
Total			8,534		2,207	-	4,989	=	0.44

chart 14

CHART 15

SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE IF THEY AGREED TO OUR RESTRICTIONS AND THE 5,000 ACCOUNTABLE WARHEAD LIMIT

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
SS- 18	154	x 1	=	154	154
SS- 24 (Silo)	56	x 1	=	56	56
SS- 25	528	x 1	=	528	528
Subtotal ICBMs	738			738	738
SLBMs					
SS- N-18	192	x 3	=	576	576
SS- N-20	120	x 6	=	720	720
SS- N-23	144	x 4	=	576	576
Subtotal SLBMs	456			1,872	1,872
Bombers					
Bear-H (ALCM)	85	x 10	=	850	680
Bear-G	20	x 4	=	80	20
Blackjack (ALCM)	16	x 24	=	384	128
Subtotal Bombers	121			1314	928
Total All Weapons	1,315			3,924	3,538

chart 15

CHART 16

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE WITH A 4,000 WARHEAD LIMIT

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
Minuteman III	500	x	1	=	500	500
MX (Peacekeeper)	50	x	1	=	50	50
Subtotal ICBMs	550				550	550
SLBMs						
C-4	248	x	4	=	992	992
C-4	88	x	8	=	704	704
D-5	96	x	8	=	768	768
Subtotal SLBMs	432				2,464	2,464
Bombers						
B-52G	55	x	16	=	880	55
B-52H	13	x	16	=	208	13
B-52H (ALCM)	80	x	16	=	1,600	800
B-1B	95	x	16	=	1,520	95
B-2	20	x	16	=	320	20
Subtotal Bombers	263				4,528	983
Total All Weapons	1,245				7,542	3,997

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	550	=	473	-	550	=	0.86
SLBMs	0.68	x	2,464	=	1,672	-	2,464	=	0.68
Bombers	0.36	x	4,528	=	1,630	-	983	=	1.66
Total			7,542		3,779	-	3,997	=	0.95

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	550	=	50	-	550	=	0.09
SLBMs	0.48	x	2,464	=	1,183	-	2,464	=	0.48
Bombers	0.11	x	4,528	=	498	-	983	=	0.51
Total			7,542		1,731	-	3,997	=	0.43

chart 16

CHART 17

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE AT A 3,000 WARHEAD LIMIT

Weapons	SNDVs	Actual Warheads	Accountable Warheads
ICBMs			
Minuteman III	500 x 1 =	500	500
MX (Peacekeeper)	50 x 1 =	50	50
Subtotal ICBMs	550	550	550
SLBMs			
C-4	248 x 4 =	992	992
C-4	88 x 4 =	352	352
D-5	96 x 8 =	768	768
Subtotal SLBMs	432	2,112	2,112
Bombers			
B-52G	55 x 16 =	880	55
B-52H	13 x 16 =	208	13
B-52H	80 x 16 =	1,600	80
B-1B	95 x 16 =	1,520	95
B-2	20 x 16 =	320	20
Subtotal Bombers	263	4,528	263
Total All Weapons	1,245	7,190	2,925

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value	Actual Warheads	Arriving Warheads	Accountable Warheads	Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86 x	550 =	473 -	550 =	0.86
SLBMs	0.68 x	2,112 =	1,436 -	2,112 =	0.68
Bombers	0.36 x	4,528 =	1,630 -	263 =	6.20
Total		7,190	3,539 -	2,925 =	1.21

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value	Actual Warheads	Arriving Warheads	Accountable Warheads	Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09 x	550 =	50 -	550 =	0.09
SLBMs	0.48 x	2,112 =	1,014 -	2,112 =	0.48
Bombers	0.11 x	4,528 =	498 -	263 =	1.89
Total		7,190	1,562 -	2,925 =	0.53

chart 17

CHART 18

SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE IF THEY AGREED TO ELIMINATE ALCMs AND THE 3,000 ACCOUNTABLE WARHEAD LIMIT

Weapons	SNDVs	Actual Warheads	Accountable Warheads
ICBMs			
SS- 18	154 x 1 =	154	154
SS- 24 (Silo)	56 x 1 =	56	56
SS- 25	528 x 1 =	528	528
Subtotal ICBMs	738	738	738
SLBMs			
SS- N-18	192 x 3 =	576	576
SS- N-20	120 x 6 =	720	720
SS- N-23	144 x 4 =	576	576
Subtotal SLBMs	456	1,872	1,872
Bombers			
Bear-H	85 x 24 =	2,040	85
Bear-G	20 x 4 =	80	20
Blackjack	16 x 24 =	384	128
Subtotal Bombers	121	2,504	233
Total All Weapons	1,315	5,114	2,843

chart 18

CHART 19

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE WITH 2,000 WARHEAD LIMIT

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
Minuteman III	500	x	1 =	500	500
MX (Peacekeeper)	50	x	1 =	50	50
Subtotal ICBMs	550			550	550
SLBMs					
C-4	336	x	1 =	336	336
D-5	96	x	8 =	768	768
Subtotal SLBMs	432			1,104	1,104
Bombers					
B-52G	55	x	16 =	880	55
B-52H	93	x	16 =	1.808	93
B-1B	95	x	16 =	1,520	95
B-2	20	x	16 =	320	20
Subtotal Bombers	263			4,528	263
Total All Weapons	1,245			6,182	1,917

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	550	=	473	-	550	=	0.86
SLBMs	0.68	x	1,104	=	751	-	1,104	=	0.68
Bombers	0.36	x	4,528	=	1,630	-	263	=	6.20
Total			6,182		2,854	-	1,917	=	1.49

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	550	=	50	-	550	=	0.09
SLBMs	0.48	x	1,104	=	530	-	1,104	=	0.48
Bombers	0.11	x	4,528	=	498	-	263	=	1.89
Total			6,182		1,078	-	1,917	=	0.56

chart 19

CHART 20

SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE IF THEY AGREED TO ELIMINATE ALCMs AND COMPLY WITH A 2,000 ACCOUNTABLE WARHEAD LIMIT

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
SS- 18	154	x 1	=	154	154
SS- 24 (Silo)	56	x 1	=	56	56
SS- 25	528	x 1	=	528	528
Subtotal ICBMs	738			738	738
SLBMs					
SS- N-18	192	x 1	=	192	192
SS- N-20	120	x 1	=	120	120
SS- N-23	144	x 4	=	576	576
Subtotal SLBMs	456			888	888
Bombers					
Bear-H	85	x 24	=	2,040	85
Bear-G	20	x 4	=	80	20
Blackjack	16	x 24	=	384	16
Subtotal Bombers	121			2,504	121
Total All Weapons	1,315			4,130	1,747

chart 20

CHART 21

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE WITH A 1,245 WARHEAD LIMIT

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
Minuteman III	500	x	1	=	500	500
MX (Peacekeeper)	50	x	1	=	50	50
Subtotal ICBMs	550				550	550
SLBMs						
C-4	336	x	1	=	336	336
D-5	96	x	8	=	96	96
Subtotal SLBMs	432				432	432
Bombers						
B-52G	55	x	16	=	880	55
B-52H	93	x	16	=	1,808	93
B-1B	95	x	16	=	1,520	95
B-2	20	x	16	=	320	20
Subtotal Bombers	263				4,528	263
Total All Weapons	1,245				5,510	1,245

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	550	=	473	-	550	=	0.86
SLBMs	0.68	x	432	=	294	-	432	=	0.68
Bombers	0.36	x	4,528	=	1,630	-	263	=	6.20
Total			5,510		2,397	-	1,245	=	1.93

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	550	=	50	-	550	=	0.09
SLBMs	0.48	x	432	=	207	-	432	=	0.48
Bombers	0.11	x	4,528	=	498	-	263	=	1.89
Total			5,510		755	-	1,245	=	0.61

chart 21

CHART 22

SOVIET STRATEGIC NUCLEAR FORCE STRUCTURE IF THEY AGREED TO ELIMINATE ALCMs AND COMPLY WITH A 1,245 ACCOUNTABLE WARHEAD LIMIT

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
SS- 24 (Silo)	56	x	1	=	56	56
SS- 25	528	x	1	=	528	528
Subtotal ICBMs	584				584	584
SLBMs						
SS- N-18	192	x	1	=	192	192
SS- N-20	120	x	1	=	120	120
SS- N-23	144	x	1	=	144	144
Subtotal SLBMs	456				456	456
Bombers						
Bear-H	85	x	24	=	2,040	85
Bear-G	20	x	4	=	80	20
Blackjack	16	x	24	=	384	16
Subtotal Bombers	121				2,504	121
Total All Weapons	1,161				3,544	1,161

chart 22

CHART 23

U.S. STRATEGIC NUCLEAR FORCE STRUCTURE WITH 1,000 WARHEAD LIMIT

Weapons	SNDVs				Actual Warheads	Accountable Warheads
ICBMs						
Minuteman III	500	x	1	=	500	500
MX (Peacekeeper)	50	x	1	=	50	50
Subtotal ICBMs	550				550	550
SLBMs						
C-4	336	x	1	=	336	336
D-5	96	x	1	=	96	96
Subtotal SLBMs	432				432	432
Total All Weapons	982				982	982

BEST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.86	x	550	=	473	-	550	=	0.86
SLBMs	0.68	x	432	=	294	-	432	=	0.68
Total			982		767	-	982	=	0.78

WORST SITUATION AND MOST PROBABLE PENETRATION PERCENTAGE (ICBMs AND SLBMs--95%, Bombers--50%)

	Gross Value		Actual Warheads		Arriving Warheads		Accountable Warheads		Ratio of Arr WHs to Acc WHs or Net Value
ICBMs	0.09	x	550	=	50	-	550	=	0.09
SLBMs	0.48	x	432	=	207	-	432	=	0.48
Total			982		257	-	982	=	0.26

chart 23

CHART 24

SOVIET STRATEGIC FORCE STRUCTURE IF THEY AGREED TO ELIMINATE SS-24s AND COMPLY WITH A 1,000 ACCOUNTABLE WARHEAD LIMIT

Weapons	SNDVs			Actual Warheads	Accountable Warheads
ICBMs					
SS- 25	528	x	1 =	528	528
Subtotal ICBMs	528			528	528
SLBMs					
SS- N-18	192	x	1 =	192	192
SS- N-20	120	x	1 =	120	120
SS- N-23	144	x	1 =	144	144
Subtotal SLBMs	456			456	456
Total All Weapons	984			984	984

chart 24

ENDNOTES

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